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Abstract

PROBLEM TO BE SOLVED: To provide a semiconductor light emitting device having an excellent temperature characteristic, a low threshold current, a low operating voltage, and high reliability and a multiple quantum barrier structure in its vertical structure by forming the films of the multiple quantum barrier structure by the atomic layer epitaxial growth method.

SOLUTION: After an n-type clad layer 2, an active layer 3, an MQB structure layer 4, a p-type clad layer 5, an intermediate layer 6, and a cap layer 7 are successively formed on a semiconductor substrate 1 by epitaxial growth, mesa grooves are formed by etching the laminated body from the cap layer 7 to part of the clad layer 5 on both sides by leaving parts the cap layer 7, intermediate layer 6, and clad layer 5 in a stripe-like state. Then n-type GaAs current constricting layers 8 are formed in the mesa grooves and the surface of the laminated body is flattened. The n-type clad layer 2 and MQW active layer 3 are formed by the metal organic chemical vapor growth method and the MQB structure layer 4 is formed by the atomic layer epitaxial growth method.